Hall Ticket No | | | | | | | | | | |

Question Paper Code: BCCB17

INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

M.Tech II Semester End Examinations (Regular) - May, 2019

Regulation: IARE–R18

SPECIAL MANUFACTURING PROCESS

Time: 3 Hours **(CAD/CAM)** **Max Marks: 70**

Answer ONE Question from each Unit
All Questions Carry Equal Marks
All parts of the question must be answered in one place only

UNIT – I

1. (a) State about the thermal spraying. Summarize its process in detail. **[7M]**
   (b) List the organic methods of coating and explain about economics of coating. **[7M]**
2. (a) State about ion implantation and summarize its process. **[7M]**
   (b) Finishing operations ensure good dimensional accuracy and good surface finish? Justify. **[7M]**

UNIT – II

3. (a) What are the processing of composites? Explain about the metal matrix composites and their applications in brief? **[7M]**
   (b) State about the processing of ceramics. List out the applications, and characteristics of ceramics. Explain the processing of particulate ceramics in detail. **[7M]**
4. (a) What are the powder preparations methods? Outline in detail the powder preparations methods. **[7M]**
   (b) What are the composite layers? Explain in detail?Illustrate the formation of particulate and fiber reinforced composites? **[7M]**

UNIT – III

5. (a) What are the fabrication methods of the computer aided design in micro electronics? Summarize about the integrated circuit economics in detail. **[7M]**
   (b) What is the crystal growth? Outline in detail about the crystal growth and wafer preparation. **[7M]**
6. (a) Explain about the printed circuit boards, computer aided design in micro electronics. **[7M]**
   (b) What is the film deposition oxidation. Explain in detail about the film deposition oxidation. **[7M]**

UNIT – IV

7. (a) Write short notes on high speed machining and hot machining. **[7M]**

   (b) Explain about the nano manufacturing techniques and their applications in brief? Outline in detail about nano imprint lithography with a neat sketch. **[7M]**

8. (a) Describe about fabrication techniques in brief. Categorize micro-fabrication technologies. **[7M]**

   (b) Conclude about the bottom-up and top-down manufacturing approach. **[7M]**

UNIT – V

9. (a) Differentiate direct tooling and indirect tooling and Discuss disadvantages of rapid prototyping. **[7M]**

   (b) Outline the need of rapid prototyping and classify the rapid prototype systems. **[7M]**

10. (a) Summarize the selective laser sintering process with line diagram. **[7M]**

    (b) List the advantages and disadvantages of fused deposition modeling process. **[7M]**

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